# *Enterprise Documentation Using XML*

**NAVSEA TMMA**
**CONFERENCE 10 April 02**

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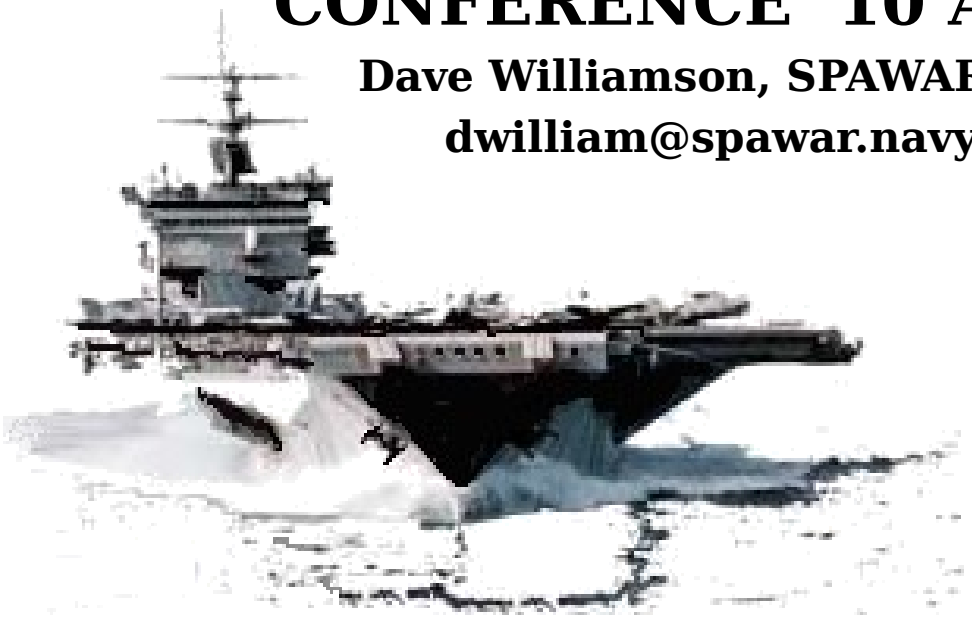


# Briefing Outline

- *The Driving Force (C4ISR Business)*
- *The Documentation Paradigms*
- *Documentation Enterprise Goals*
- *The SPAWAR Approach*
- *Levels of Virtual Documents*
- *Content Management System (CMS)*
- *Summary*

# *The Driving Force*

Navy Digital Data Policy (ASN RDA)

"To achieve the goal of an integrated digital data environment [System Command Commanders] must…convert existing hardcopy logistics technical data to digital form consistent with the DoN use of standards when a business case analysis supports the conversion as cost effective"

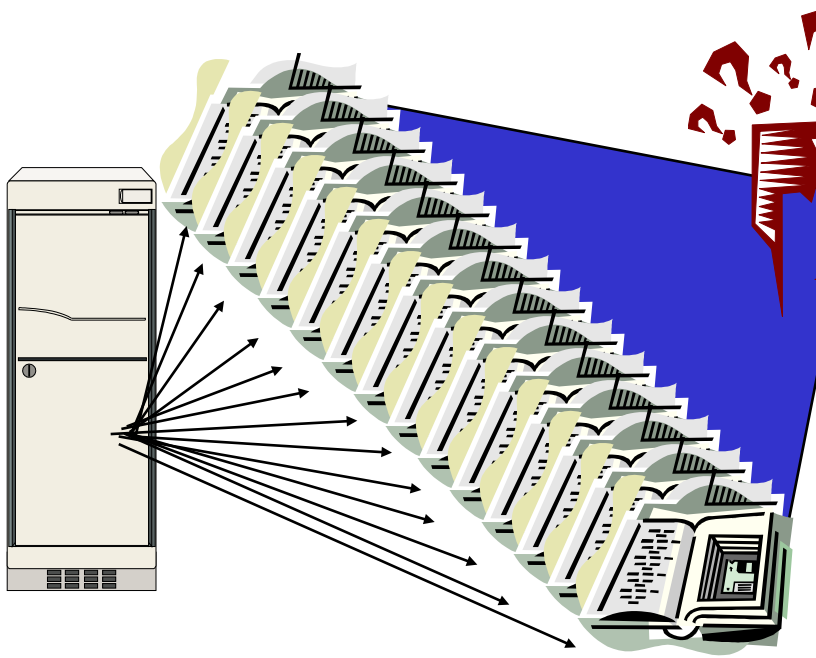
Requires a business case for conversion of existing technical documents to electronic format

# Documentation Enterprise

- Provide interoperable dynamic documentation to the fleet online with the equipment
- Develop consistent form and format using XML Job Task-based format
- Improve Documentation user efficiency through standardization of content
- Provide integrated systems consisting of software application, user documentation and training materials delivered as one cohesive product

# The Documentation Paradigms

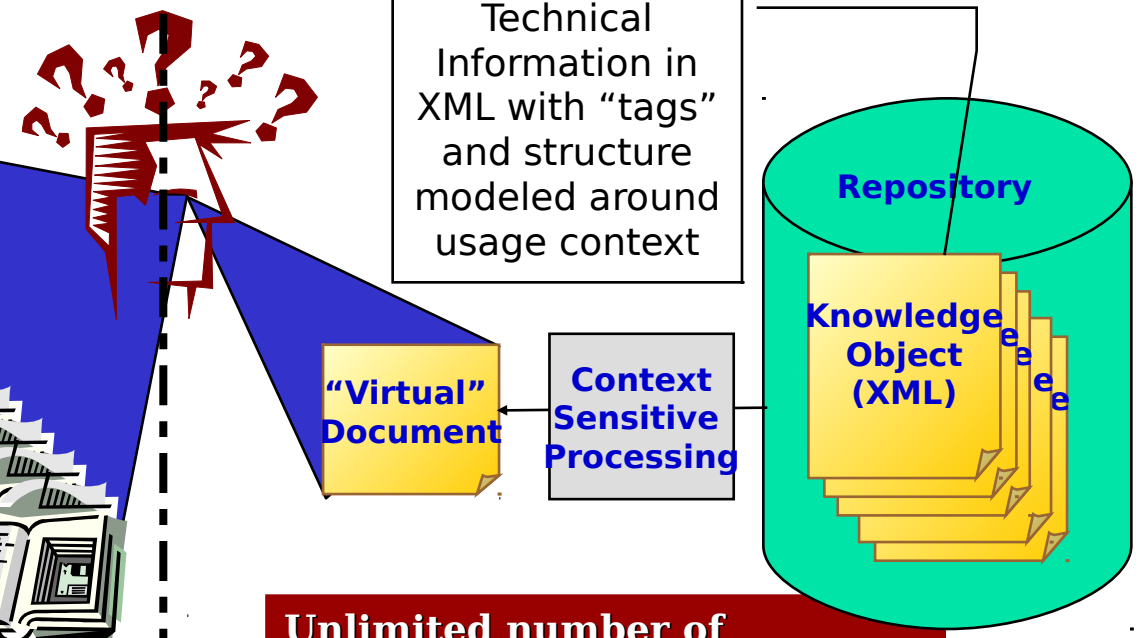
## ATIS "Juke Box"



Thousands of disjoint "documents" that users must read, remember, then locate later for reference. This approach breaks down as more an more documents are added....

## Virtual Document System

Technical Information in XML with "tags" and structure modeled around usage context




Unlimited number of "knowledge objects" managed by a content repository system available to software that understands what user needs (by context) and dynamically generates just the right information at just the right time.

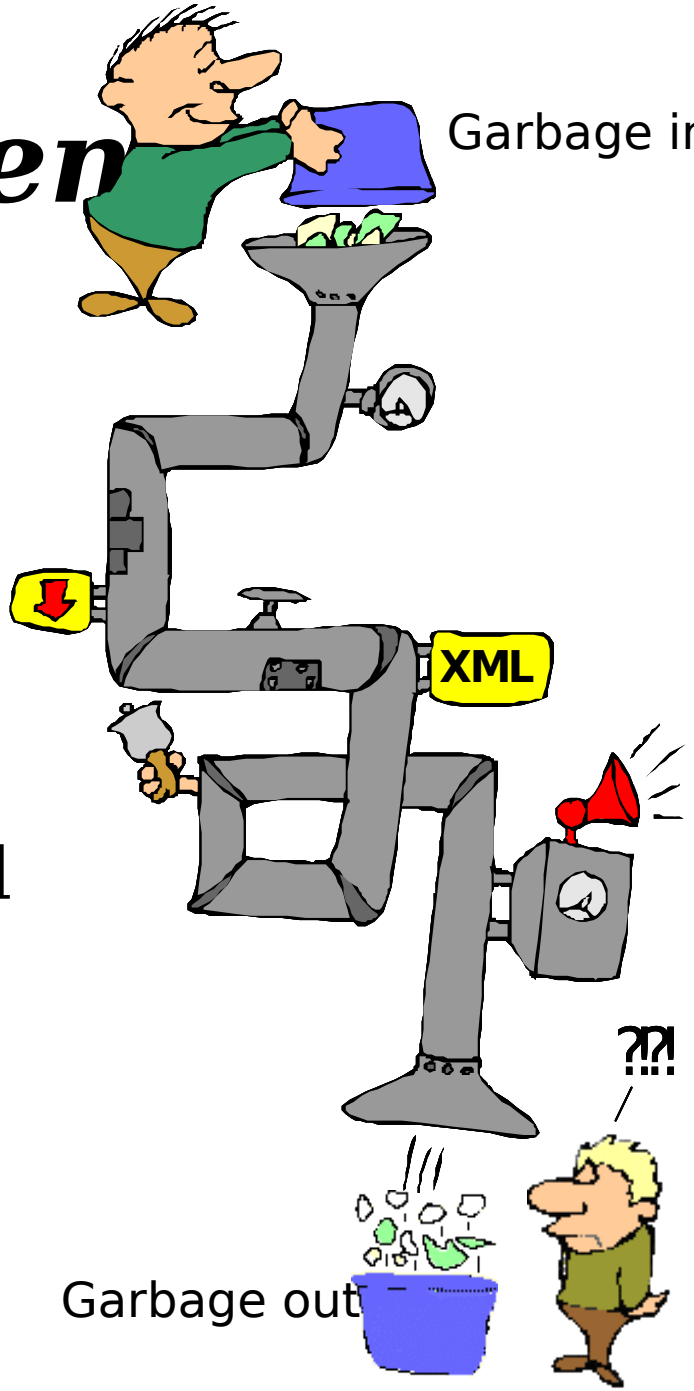
ecause they allow us to provide more information to our

# The SPAWAR Approach

- The 3 primary areas of change required
  - Improving User Content
  - Leveraging XML Technology
  - Improving The Infrastructure
- Key to our success is leveraging these changes as a enterprise corporation

# *Improving Conten*

- No technology or process alone will improve our documentation suitability
- Standardize and provide instructional guidance on how to write job tasks based documentation via UML
- Content drives user efficiency



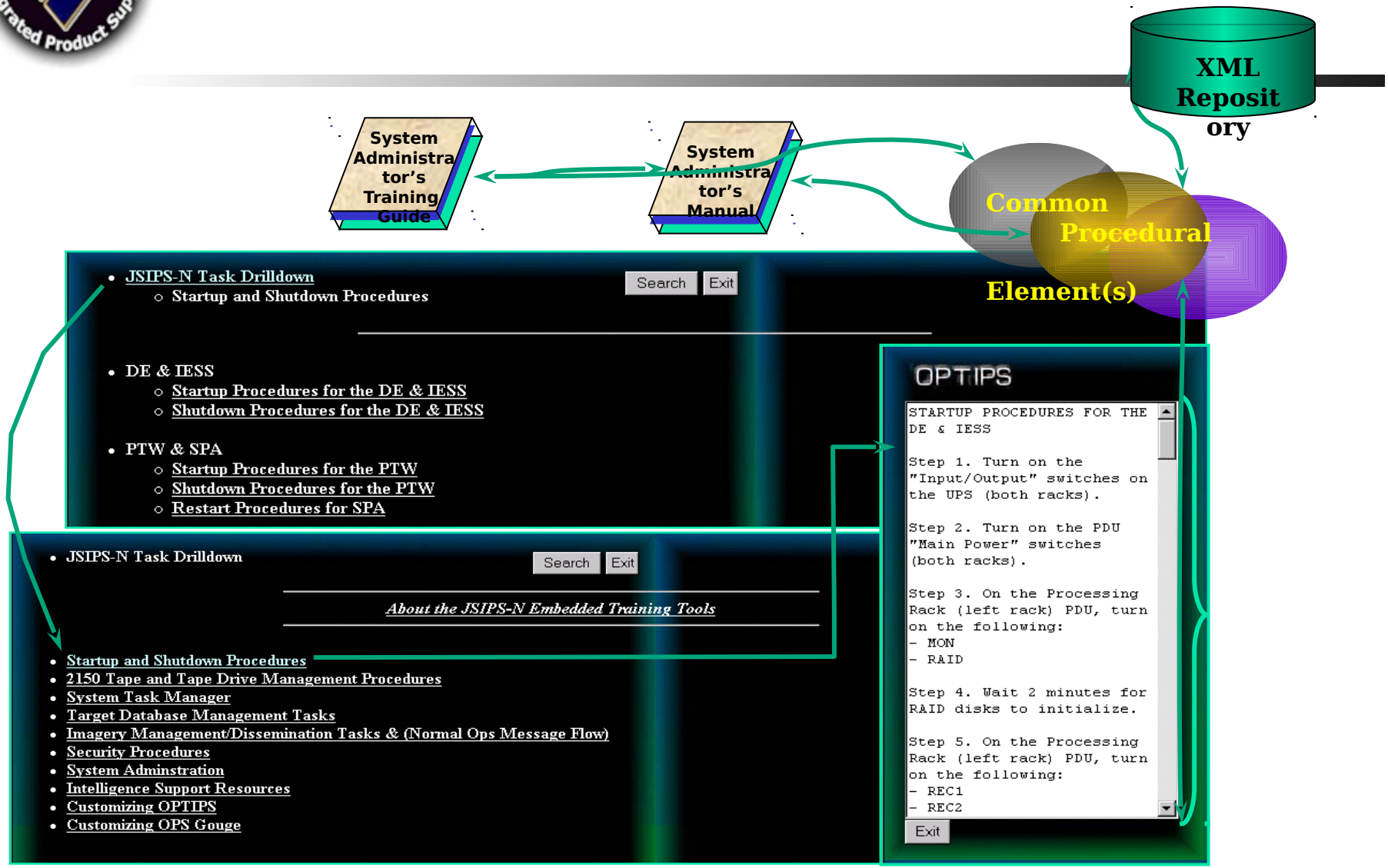
# Leveraging XML Technology

- Why XML?
  - eXtensible Markup Language (XML) is the ***primary commercial*** standard data markup language
  - In other words, the same data can be reused and displayed any way required utilizing COTS tools, standards, interfaces, and practices
  - Re-engineer documentation using object-oriented design break documents down to specific knowledge elements

# Choosing a data standard

- Direct conversion of paper to tagged markup language (e.g. HTML) insufficient
  - Does not facilitate re-usage of elements
    - Does not cut down on duplication of effort
  - Hard to Manage/Maintain
  - Does not facilitate directed collaboration
- XML objects facilitates content review for appropriate re-use in other applications

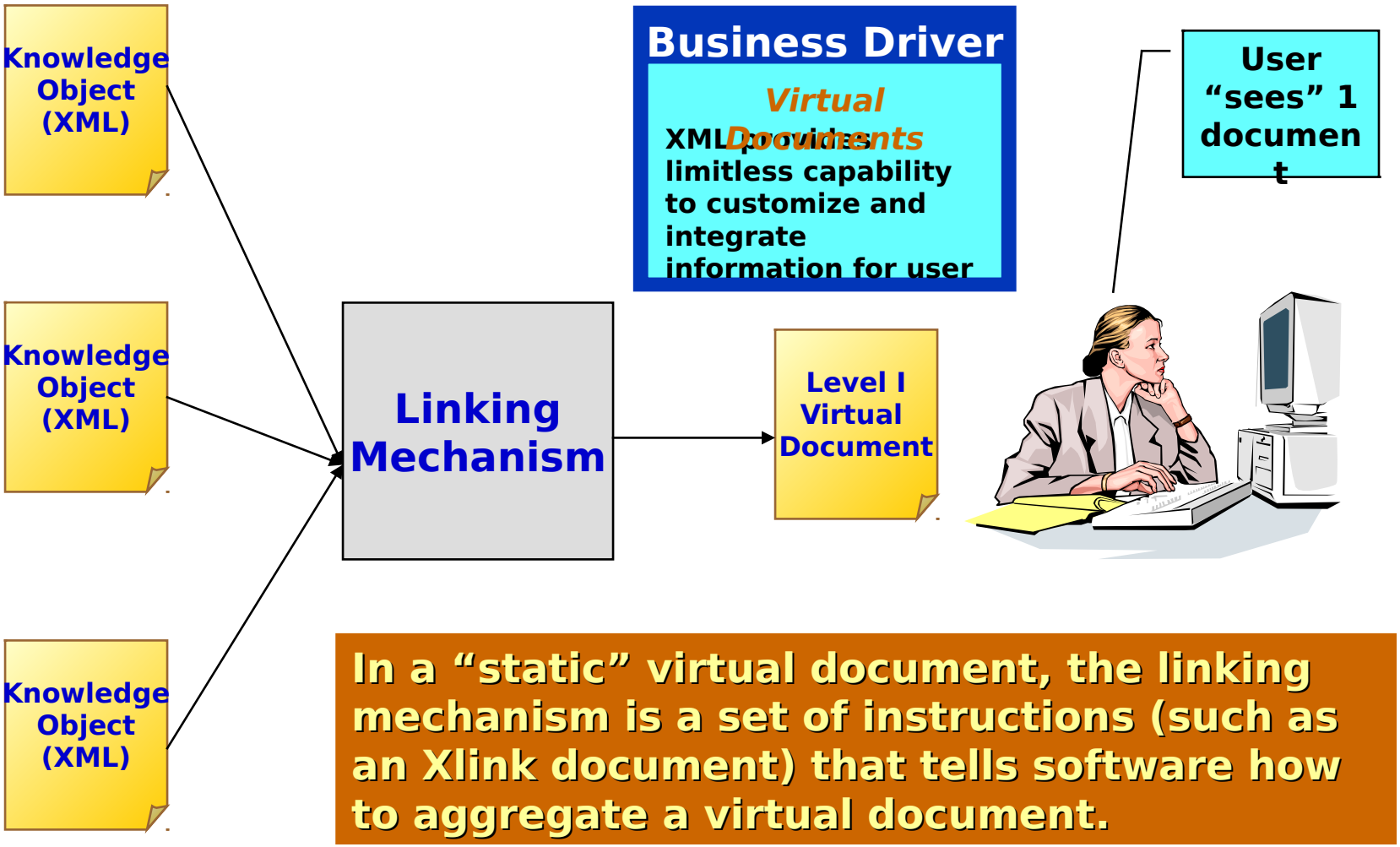
# Reuse Example: Procedural Data


XML Repository
System Administrator's Training Guide
System Administrator's Manual
Common Procedural Element(s)
JSIPS-N Task Drilldown
Startup and Shutdown Procedures
Search
Exit
DE & IESS
Startup Procedures for the DE & IESS
Shutdown Procedures for the DE & IESS
PTW & SPA
Startup Procedures for the PTW
Shutdown Procedures for the PTW
Restart Procedures for SPA
JSIPS-N Task Drilldown
Search
Exit
About the JSIPS-N Embedded Training Tools
Startup and Shutdown Procedures
2150 Tape and Tape Drive Management Procedures
System Task Manager
Target Database Management Tasks
Imagery Management/Dissemination Tasks & (Normal Ops Message Flow)
Security Procedures
System Adminstration
Intelligence Support Resources
Customizing OPTIPS
Customizing OPS Gouge
OPTIPS
STARTUP PROCEDURES FOR THE DE & IESS
Step 1. Turn on the "Input/Output" switches on the UPS (both racks).
Step 2. Turn on the PDU "Main Power" switches (both racks).
Step 3. On the Processing Rack (left rack) PDU, turn on the following:
- MON
- RAID
Step 4. Wait 2 minutes for RAID disks to initialize.
Step 5. On the Processing Rack (left rack) PDU, turn on the following:
- REC1
- REC2
Exit

# *Improving The Infrastructure*

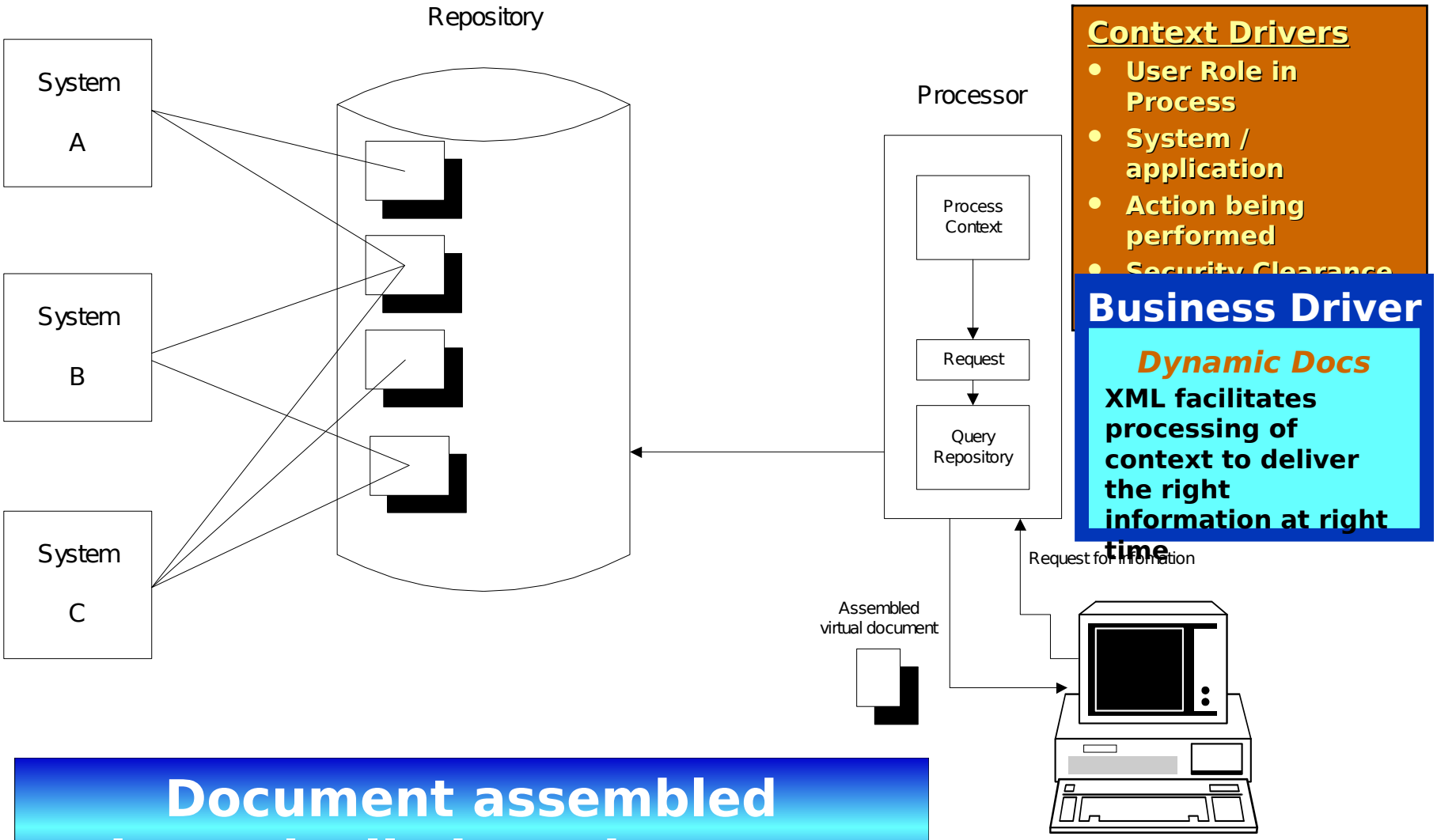
- Fix the electronic processes by which we create documentation
  - Involvement of TMMA document and training developers and fleet during the development cycle, software developers in the test cycles and Fleet VAL/VER
  - Establish a central authority to focus on content feedback from fleet for common products
  - Ensure object level content review by appropriate SMEs
  - Establish an online Collaborative environment for data sharing and reuse across PORs
  - Documentation data put under same controls as software/system data (e.g., CM, CCB)

# Static Virtual Documents "Level I"




**In a "static" virtual document, the linking mechanism is a set of instructions (such as an Xlink document) that tells software how to aggregate a virtual document.**

# Dynamic Virtual Documents "Level II"



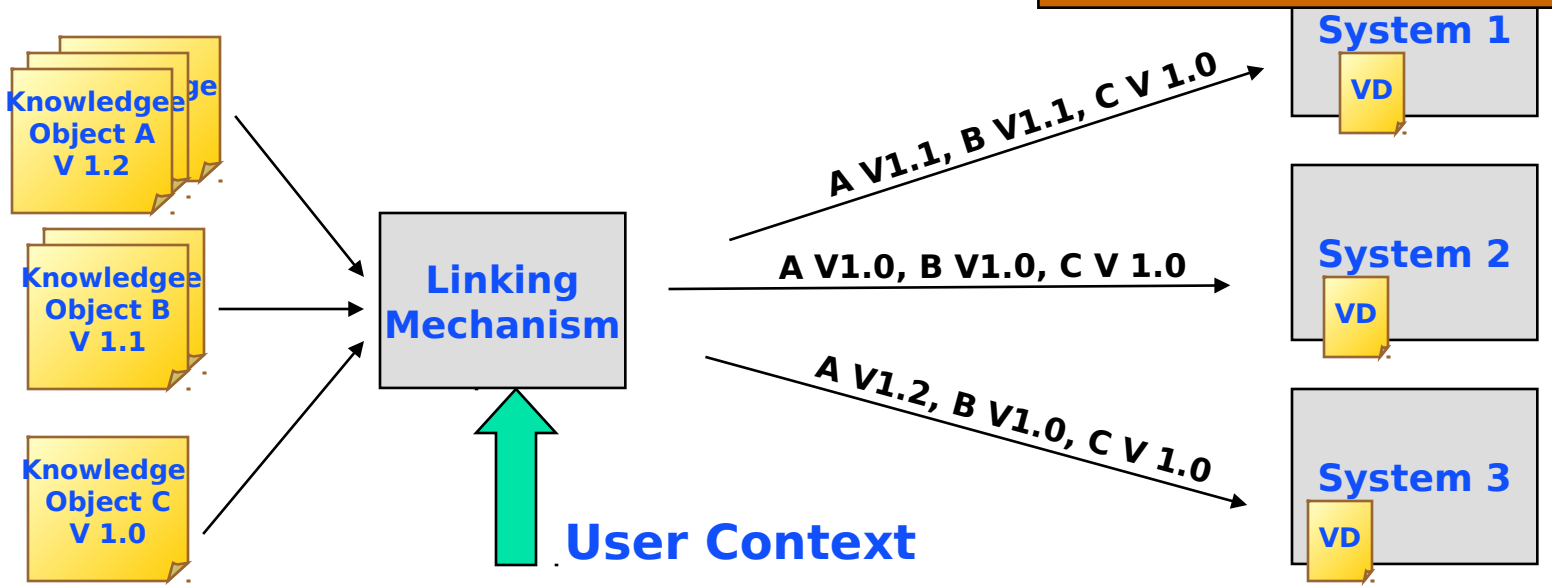

**Document assembled dynamically based on user**

# Virtual Document Management Issues

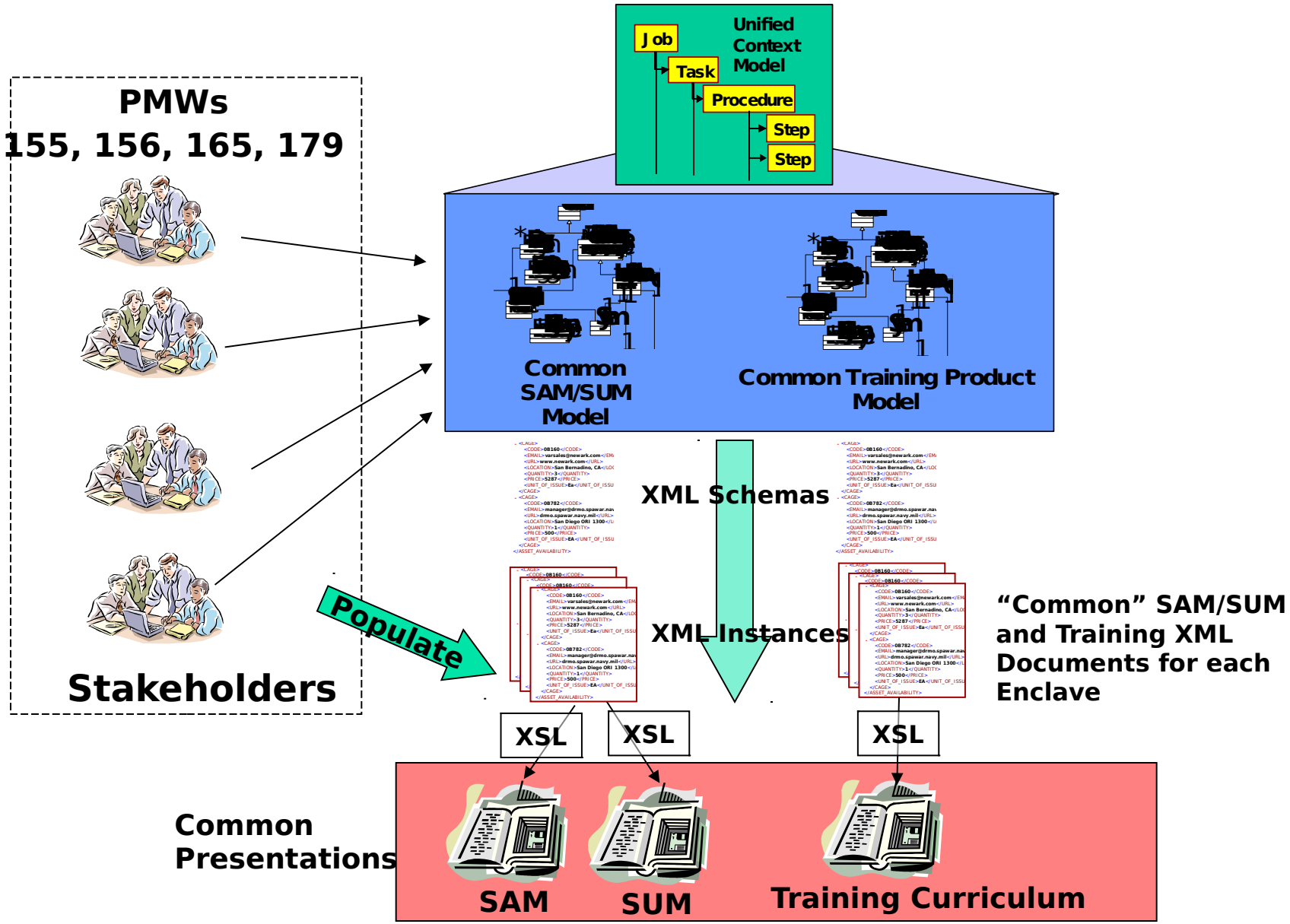
Configuration management issues

- Validation and Verification
- Tracking components and version control
- Link Management

- **How track components and their versions as complexity increases?**
- **How Val/Ver that the VD makes sense?**
- **How manage increasing complexity of links between documents?**



# Enterprise Virtual Documents "Level III"



# The Basis: Unified XML Job Task Model

**Duties**—

*Perform track management*
*Process JMHS messages*
*Access the system*

**Tasks**—

*Create a new track*
*Disassociate tracks*
*Access the domain controller*

**Subtasks**—

*Establish an ELINT track*
*Determine FOTC startup settings*
*Logon to a domain controller*

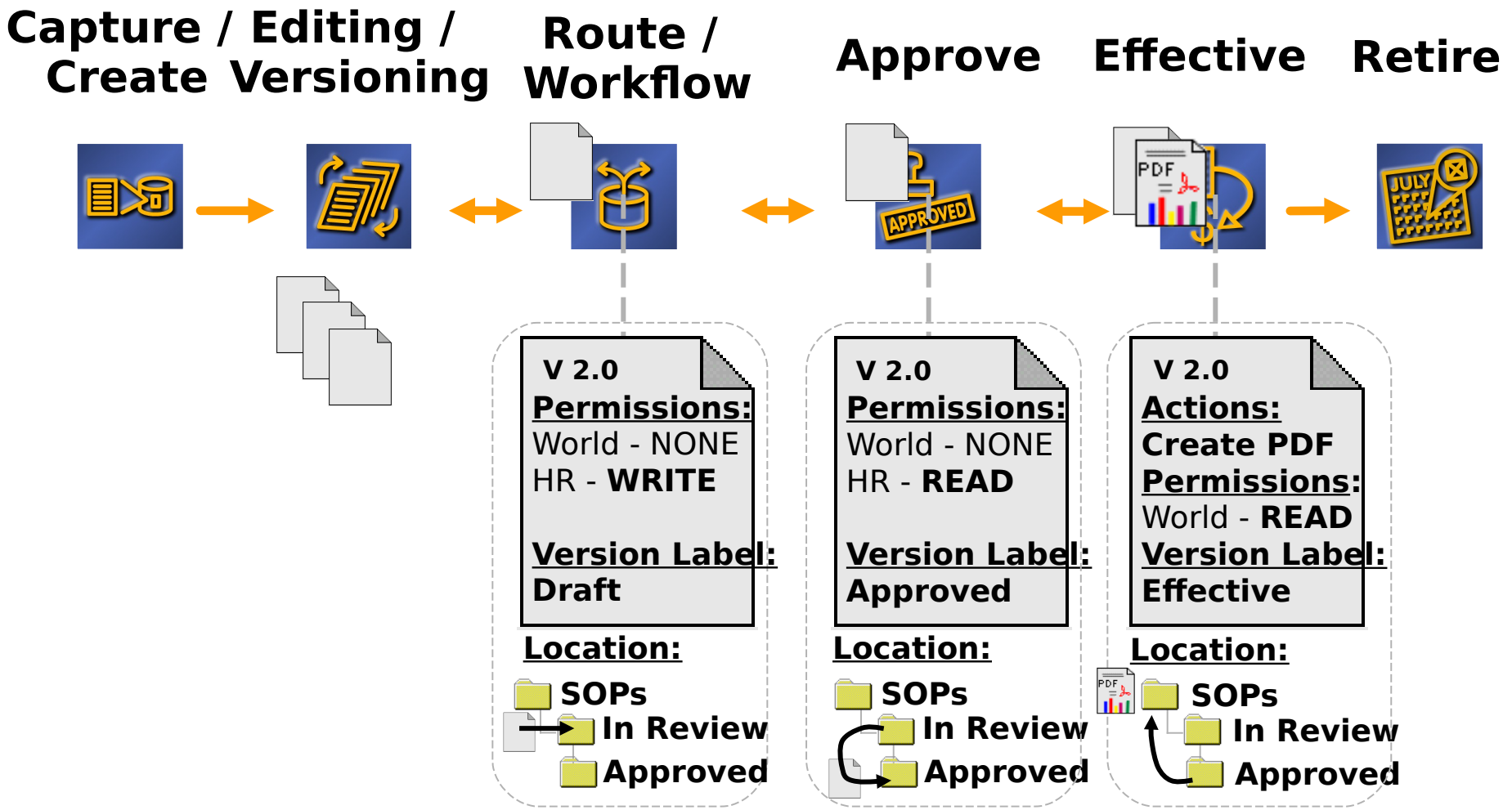
**Procedures**—

*Logon to a domain controller as an Administrator*

**Steps**—

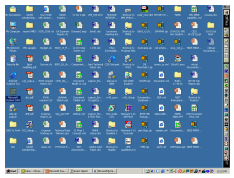
1. *Press **Control + Alt + Delete** at the prompt*
2. *Read the **Warning Statement** and click **OK***
3. *Enter your **Username** and press **Enter***
4. *Etc.*

# Managing The Content Lifecycle



# CMS NMCI Web Access

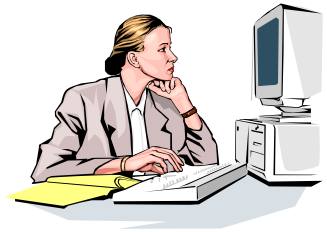
Content Creator



Virtual Private Network

Manager

Internet (Web) Client



Publication Authority

Administrator (Web) Client

User

Virtual Library

Check out
Edit
Check in to
Work Flow

Review $
Approve

Publish

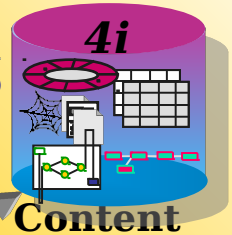
Pull Content

Web App Server

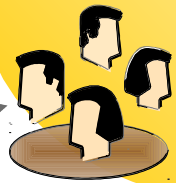
**Thick Clients**

- Desktop Client
- Developer Studio

Admin/Develop



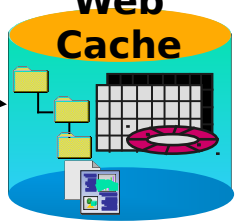

Content Repository



Content Creators

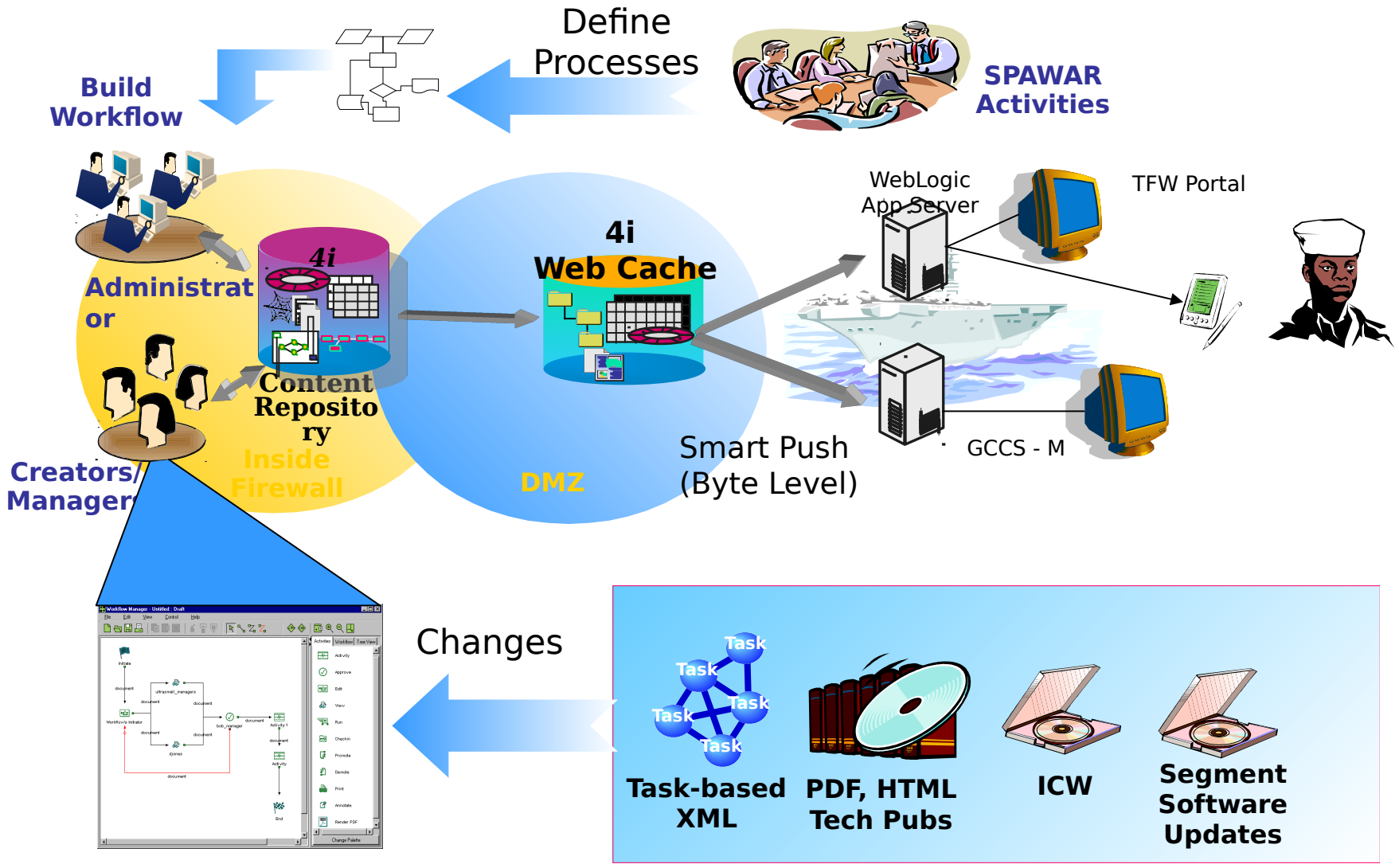
LAN/WAN

4i Web Cache



Push Content
*"Live" or "Copied"*

# The End-to-End Operational Vision



# Summary

- The Documentation Paradigm
- Why XML
- Why Virtual Documents
- The Benefits